CHAPTER ONE
OVERVIEW AND HISTORICAL CONTEXT

Overview

The Yucca Mountain program presents the nation and the State of Nevada with the prospect of incurring risks and impacts unprecedented in U.S. history - perhaps even in human history - not just for years or decades, but for thousands and even tens of thousands of years into the future. The project represents an undertaking of unprecedented proportions and risks, one that embodies extremely long time horizons, an uncertain political and financial base, a massive, unprecedented radiological materials transportation component, and a long list of site, engineering, and transportation characteristics that result in almost-unheard-of uncertainty levels for every aspect of the program.

A repository at Yucca Mountain, about 90 miles from Las Vegas, and the transportation of spent nuclear fuel (SNF) and high-level radioactive waste (HLW) to such a facility have the potential to significantly and negatively impact not just Nevada and the California region close to the proposed repository facility, but it will also directly and indirectly impact states and communities throughout the nation located along spent fuel and HLW transportation routes.

While the impacts to the State of Nevada from the Yucca Mountain program would be enormous, they pale by comparison to the potential negative impacts that would accrue nationally to the hundreds of cities and thousands of communities along thousands of miles of highways and railroads en route to the Nevada facility, as well as to the federal budget and the American taxpayer.

The transportation of SNF and HLW is ***the*** major source of these impacts, which include potential widespread and substantial damage to public health and safety, the environment, economic development and economic well-being, property values, and a host of other consequences discussed in the pages that follow.

The fact that Yucca Mountain, a project designed to benefit a largely privately owned, for-profit industry, is being forced on one lone state against the strong, consistent, ubiquitous, and irreversible opposition of the State, its people, and its elected officials is unprecedented in the history of American federalism. The conflict and constitutional turmoil potentially created by such a situation exacerbates and amplifies other project impacts and will have consequences, both in Nevada and nationally, that extend far into the future.

Apart from and far surpassing the more traditional impacts of large, complex, and dangerous projects, the Yucca Mountain program and the associated HLW shipping campaign would generate a class of stigma impacts that attach to nuclear and/or hazardous facilities and activities. These are not psychological effects; nor are they inconsequential. These are real, definitive, quantifiable impacts that are directly

manifested in economic indicators such as reduced property values, reduced value for agricultural products, reductions in tourism and conventions, suppressed economic development, and reduced business investment. The costs related to this class of impacts are substantial in the extreme and are not readily subject to avoidance or any form of mitigation. They can occur anywhere in the country affected by nuclear activities associated with the federal program.

Strong public responses to facilities and programs designed to store, dispose of, or transport radioactive wastes have a long history. They have been expressed in every area of the country and have served to initiate important political, social, and economic behaviors. Opposition and aversion as responses to radioactive wastes have been recorded by journalists, economists, sociologists, social geographers, social psychologists, historians, anthropologists, risk analysts, planners, regulators, legislators, physical scientists, social scientists, politicians, business leaders, and local, state, and federal officials. Opposition and aversion are so prevalent that they dominate the range of responses. Failure to recognize this fact and address the implications of such aversion and opposition is a failure to address the most basic and important socioeconomic impact from the proposed repository at Yucca Mountain and the transportation of nuclear waste to such a facility.

Over the past two decades, social scientists have developed the theories, methods, data, and analytical capabilities to describe, understand, and project the range of potential socioeconomic impacts. Information on the public's responses to the repository program and how people's behaviors produce important, concrete, and quantifiable socioeconomic impacts has long been available.

It is irresponsible and unacceptable for the Secretary of Energy to consider recommending the Yucca Mountain site to the President for development as a nuclear waste repository without first having fully studied, understood, and addressed all of the social, economic, health and safety, and environmental impacts of this unique facility and the unprecedented national nuclear waste transportation program it embodies.

Historical Context

The Nuclear Waste Policy Act of 1982

After two decades of failure on the part of the Atomic Energy Commission and its successor agencies to solve the HLW problem, Congress spent five years considering the problem and eventually passed the Nuclear Waste Policy Act of 1982 (NWPA). In direct response to public resistance and aversion to HLW facilities and activities, the NWPA of 1982 incorporated a number of unique and interdependent provisions to obtain congressional approval and to address the concerns of state and local communities.

Several provisions or compromises addressed concerns about an equitable outcome from the program. Two repositories were mandated, one in the West where some potential sites had been looked at, and one in the East where most of the wastes are

created. The principle was established that generators of the wastes would pay for the program, and a fee was imposed on nuclear-generated electricity to create the Nuclear Waste Fund. Compensation was authorized for states and communities that experienced adverse economic impacts.

Provisions of the Act were specifically directed at the need to assess the full range of impacts that would result from the federal program. The Act even requires the Secretary of Energy to make grant funds available to potential host states and, later, to any affected unit of local government for the purpose of "determining any potential economic, social, public health and safety, and environmental impacts of a repository on such State, or affected unit of local government and its residents" [42 U.S.C. 10136(B)(i)].

In addition, the Department of Energy (DOE) was required to report to affected stakeholders (state governments, Indian tribes, the public, etc.) on all activities. The site selection process was to be based on objective technical criteria and was to be subject to outside scrutiny and review. DOE was directed to consult and cooperate with affected states and tribes (including those impacted by HLW transportation) before making key decisions. Participation by the affected states and tribes to oversee the repository program and conduct impact and other studies was to be funded through the Nuclear Waste Fund. Host states were provided with the right to file a notice of disapproval, essentially a veto of the site, which could only be overturned by Congress.

The NWPA assigned the U.S. Environmental Protection Agency the duty to set radiation exposure standards and gave the U.S. Nuclear Regulatory Commission the authority to permit and license the construction and operation of a repository facility. The provisions for fairness and assuring public safety were designed to make the eventual choice of a site acceptable to those directly affected and to the nation as a whole. This attempt was successful to the extent that, in December 1982, there was support for this Act even from congressional representatives from states identified as potential repository host sites.

The finely crafted compromises and protections governing the identification and evaluation of potential repository sites built into the original Act were summarily abandoned in the 1987 amendments that singled out Yucca Mountain as the only site to be considered. The result was an almost total loss of credibility in Nevada and elsewhere for DOE's site characterization effort and the creation of an atmosphere of hostility and distrust – an ideal breeding ground for the type of amplified impacts and risks documented in this report.

Nevada Studies to Evaluate Impacts

Key issues, concerns, and problems that produced social and economic impacts and limited public acceptance and support were brought into focus during the early years of the federal program (1983-1987). Public concerns about human and environmental exposure to radiation were clearly articulated in the context of widespread references to

past DOE activities with the nation's weapons program. Expressions of distrust of DOE were raised at the federal, state, and local levels. The ability of DOE to properly manage the program mandated by Congress was called into question on several levels as the schedule for performance slipped, key program goals were ignored, adversarial legal actions were initiated, and costs escalated.

State and local governments raised important questions. In addition to the exposure risks and the questions about DOE management, concerns were expressed that the public would respond adversely to places that hosted HLW facilities. Tennessee, for example, argued that a Monitored Retrievable Storage Facility would stigmatize local communities and the state, adversely impacting attempts at economic development. Along the same lines, the State of Texas and farmers near the Deaf Smith County candidate repository site were concerned that their agricultural crops would be stigmatized. This was also a concern of farmers in Washington State near the proposed facility site on the Hanford weapons complex reservation. In Maine, there was concern that a potential second repository site would ruin the tourist and recreation economy of the area, a potential adverse impact that was also raised in more than a quarter of the statements at public hearings held in Wisconsin and North Carolina (Kraft and Clary, p. 105).

There was also widespread concern about the risks associated with the HLW shipping campaign needed to implement the federal program envision by the Act. As early as 1986, organizations such as the Western Governors' Association and the Western Interstate Energy Board were strongly and persistently urging DOE to move proactively to disclose the various elements of this national transportation system, including the preferred method by which waste would be shipped, the routes that would be used, and the states that would be affected.

This early history of public responses throughout the nation to the NWPA (1982) program served to identify important areas of socioeconomic impact for DOE, state, and local officials responsible for administration and oversight of HLW programs. In terms of socioeconomic impacts, it became clear during this period that HLW possessed the potential to induce a wide range of impacts at all levels of society and to produce "special effects" as a direct result of the nuclear and hazardous nature of the program. In order to evaluate the potential socioeconomic impacts of a repository program, it was clear that these special effects would have to be taken into account, not only as they pertained to the host state, but also to states, cities, and communities affected by shipments of spent fuel and high-level waste destined for a repository.

By virtue of having one of several repository sites being considered, the State of Nevada outlined the requirements for assessing impacts of the proposed facility site at Yucca Mountain in 1985 and initiated a major research effort. The purpose of the effort was to identify and evaluate not only the standard economic-demographic-fiscal impacts based on tried and true methods developed over the preceding decade of experience with the National Environmental Policy Act of 1969, but also to conduct new basic research to address "special effects" that were so obviously important determinants of public

responses to HLW facilities, HLW transportation, and the impacts stemming from such responses. To provide for an objective review of the research effort, the State established a Technical Review Committee made up of distinguished social science researchers and professionals.

The effort to understand project impacts focused on both the unique characteristics of the Nevada economy, especially tourism, gaming, conventions, recreation, outside business investments, and the in-migration of workers and retired people, as well as the nature of the HLW transportation system required to move waste to a repository. The goal was to develop methods to evaluate the potential effects of the repository within the Nevada and national socioeconomic contexts.

The Historical Case for Assessing Impacts

Potential impacts from the federal HLW program stem directly from two interrelated sources: The repository facility itself and the transportation of HLW to the facility. Operating with respect to both of these sources are (1) the interplay of each with the direct physical, environmental, economic, and public health contexts that characterize both elements, and (2) the potent, but less well understood effects that stem from the nuclear nature of the facility and the waste shipments, together with public responses to things nuclear, especially to high-level radioactive waste.

It became clear to Nevada researchers early on that the potential negative impacts stemming from the nuclear stigma associated with the federal program would be substantial, and even DOE initially acknowledged the need for further investigations.

As early as 1986, DOE's final Environmental Assessment (EA) for the Yucca Mountain site acknowledged the potential for impacts to Nevada's tourism-dependent economy and the need for additional research:

> "... the potential for adverse public perception of a repository and its associated waste transportation could adversely affect the tourism industry. The importance of public perception lies in the attractiveness of the image of Las Vegas to potential visitors. Concerns have been expressed that this image could be affected by the visibility of the repository and waste shipments and by safety concerns regarding the high-level radioactive waste-disposal system, particularly when accompanied by extensive media attention. Preliminary research to date concerning the potential effect of a repository on tourism is inconclusive; *therefore further studies would be conducted*" (emphasis added).

Additional commitments to address tourism and so-called risk perception impacts are contained throughout the final EA. Nevertheless, no subsequent work in this crucial impact area by DOE's Yucca Mountain Project was ever carried out - or, if it was, the work was never disclosed.

When Congress redirected the federal HLW program in 1987, it implicitly acknowledged the unique and special nature of the program, the intense public responses to it, and the need for a complete and exhaustive assessment of impacts. Section 175 of the Nuclear Waste Policy Amendments Act of 1987 directed DOE to report to Congress on potential socioeconomic impacts that could occur as a result of locating a repository at the Yucca Mountain site, including those related to the transportation of waste to the facility. DOE was directed to report on fourteen (14) specific areas of potential impacts covering the gamut from education to public health to public lands, emergency response, and transportation, among others. Specifically singled out by Congress was the directive (number 13 on the list) that DOE report on potential impacts to "tourism and economic development, including the potential loss of revenue and future economic growth."

The "Section 175 Report" was released in December 1988. While the treatment of tourism and economic development impacts in the document was cursory at best, the report did conclude that a repository at Yucca Mountain could have negative effects on these important economic areas. With respect to economic development, the report found that, "[b]ecause the repository may be defined by some as a hazardous activity, some limitations on the prospects for economic development ... may result."

In evaluating the potential for impacts on tourism and economic development later in the report, DOE concluded that "[p]ossible changes in economic development patterns, generally, and in the tourism industry specifically, in southern Nevada may result from the repository program." Such impacts were to be identified and quantified in subsequent impact assessments. No mention was made of the potential for these impacts to occur throughout the national nuclear waste transportation system.

Following the publication of the Section 175 Report, a June 1992 policy directive was issued by DOE headquarters to Office of Civilian Radioactive Waste Management (OCRWM) Associate Directors and Office Directors stipulating that "... perception-based impacts [i.e., stigma impacts] are of potential concern to affected governments, interested parties and the public and should be appropriately addressed by OCRWM." The memorandum was in response to an earlier memo that sought to limit research in this area. The new directive superceded the prior guidance and specifically noted that "[the previous memorandum] is not viewed as limiting OCRWM-supported research in this area [i.e., stigma and perception impacts on tourism and economic development]."

The June 1992 memorandum was followed in July 1992 with a "Socioeconomic Policy Management Directive" from OCRWM. This directive was intended to serve as "... the program-level policy document that would guide the conduct of all OCRWM socioeconomic activities. Project-level socioeconomic plans for all OCRWM components would be prepared in accordance with the guidance provided in this document, and would serve as the primary source of information about each project's socioeconomic activities" (page 1).

To guide the OCRWM socioeconomic program, the Policy Directive set forth a list of specific objectives "designed to help OCRWM realize its mission." Two of these

objectives are especially relevant to the draft Yucca Mountain Environmental Impact Statement (DEIS):

- Address "standard" impacts arising primarily from program-related employment and population growth as well as expenditures for materials, equipment, and services.

- Address developments, as necessary, in the area of "special" impact assessment arising primarily *from the various components* of the high-level radioactive waste program [emphasis added] (page 2).

In addition to DOE's policy pronouncements regarding the need to assess "special" impacts, there is evidence that DOE considered the State of Nevada's extensive work in identifying potential stigma impacts associated with the high-level radioactive waste program and nuclear waste transportation to be credible and appropriate. In 1993, DOE commissioned Argonne National Laboratory to evaluate research on risk perception and stigma impacts carried out by the State of Nevada. Since much of the State's work involved survey research, Argonne contracted with the National Opinion Research Center (NORC) at the University of Chicago to undertake a technical evaluation of the methodologies used in the State's "special" impact assessment activities. The NORC report is instructive as to the high quality and appropriateness of the Nevada stigma research. The report concluded:

> "... the [State of Nevada] surveys could provide valuable data about risk perceptions and potential behavioral responses. NORC identified a few minor problems with a number of questions and calculated response rates but claimed these problems would probably not have any major biasing effects."

The report went on to praise the creativity and robustness of the survey research, noting that the State surveys "exhibit some considerable creativity in approaching a difficult measurement problem." The report expressed "confidence that the conclusions [of the State's stigma research] are not highly dependent on the measurement technique, that is they are robust across measurement methods," noting that "... such robustness is a very important attribute in assessing the validity of the surveys."

DOE has, in fact, sponsored its own "stigma" research that was not included in the socioeconomic analyses contained in the DEIS or in any other DOE evaluations on Yucca Mountain impacts or suitability. An excellent example of this research, which has direct implications for potential national transportation impacts of the program, is the work done by the University of New Mexico under contract with DOE. Of particular interest is a study by Gawande and Jenkins-Smith (1999) on the effects of stigma on property values along routes in South Carolina that were used to transport spent nuclear fuel from foreign research reactors. The Gawande and Jenkins-Smith findings are extraordinarily important and relevant to the potential for stigma effects stemming from the Yucca Mountain program and related nuclear waste transportation. Specifically, the

researchers found that the hazardous, nuclear nature of these shipments and peoples' responses to them directly caused property values in urban Charleston to be "lowered in a substantive manner":

> "... we are convinced by the results for Charleston County [South Carolina] that real price effects can occur when shipments like those involved in the [foreign spent nuclear fuel] FSNF return program take place. Despite systematic and extensive search for alternative explanations, the onset of the shipments appears to be the best explanation for the drop in housing values close to the route. Moreover, the results are consistent with research regarding the effects of other disamenities (e.g., polluted water, air and Superfund sites), with the self-reports of perceived risk of spent nuclear fuel shipments obtained in public opinion surveys, and with surveys of expected effects of nuclear waste shipments on housing values (Flynn et al, 1997)."

In 1991, Argonne National Laboratory, under contract to DOE, undertook an evaluation of the need for studies into potential stigma-related impacts on business location decisions and economic development in Nevada. The issue of possible impacts of stigma and risk perceptions on small firms' location decisions was addressed:

> "Stigmatization and perceived risk can influence the location decisions of small firms, because of the importance personal preferences play in their location decision-making behavior. Although the impact of changes in behavior as a result of stigma and changes in risk perception is likely to be smaller in terms of total employment and income effects than it would be if a large manufacturing or service firm were forced to move, the effect on the competitiveness of a location can still be substantial. ...Consideration of the location decision-making behavior of small firms would be of great value in assessing the special effects associated with a repository or other hazardous facilities, given the importance of personal preferences in location decisions. ... Systematic consideration of these influences on entrepreneurs of small firms would be important in determining if and how stigmatization and perceived risk would affect the location decisions of small businesses."

Despite all of the information available and DOE's own assurances that the full range of impacts from Yucca Mountain and the associate HLW shipping campaign would be assessed well before any site recommendation was made, the Department failed to accomplish – or even attempt – this work in the single most important environmental document for the repository program, the Draft Yucca Mountain Environmental Impact Statement. Following its release for comment in August 1999, the State of Nevada conducted a comprehensive review of the DEIS and provided several hundred pages of comments. The State found DOE's approach to impact identification and analysis to be both legally and substantially deficient. More importantly, the State perceived a certain

intentionality in the avoidance of an adequate and complete examination of project impacts:

> "The fundamental and irreparable shortcomings of the Draft EIS are all the more disturbing because DOE should have known better. Thousands of pages of comments were provided on the draft and final EA. Nevada alone submitted over 300 pages of detailed, focused, and extremely helpful comments on the [1985] draft EA. Thousands more comments were made by hundreds of people and organizations during the scoping process for the draft EIS in 1995. For the most part, prior comments and criticisms that would have assured an adequate EIS were disregarded. DOE simply moved stubbornly forward in a manner designed to produce a minimalist environmental impact statement ratifying DOE's predetermined and politically driven conclusion that the Yucca Mountain program would result in no significant impacts anywhere, at any time" [State of Nevada Comments of the Draft Yucca Mountain EIS, February 2000].

It is clear from the historical record that DOE, as early as 1988, recognized the potential for "special" or stigma effects of the Yucca Mountain program and HLW transportation to result in significant impacts to Nevada and the nation. DOE took steps to evaluate the extensive body of research on this matter produced by the State of Nevada and found that work to be sound. Finally, DOE undertook its own research on stigma impacts associated with the transportation of spent nuclear fuel and obtained confirmation that such impacts can and do occur and are potentially significant.

Nevada's research has developed a convincing body of evidence that shows the greatest potential socioeconomic threat from the proposed repository stems from impacts related to intense negative perceptions and stigma associated by the public with a high-level radioactive waste repository, combined with the vulnerability of Nevada's and other states'/communities' economies to changes in their public image and stigmatization resulting from program activities. Because of the high profile nature of the whole nuclear waste disposal program, the potential exists for Nevada as well as other locations to become associated with these negative perceptions to the detriment of their ability to attract tourists, conventions, migrants, and diversified new industry. This would be especially troublesome in the event of a nuclear waste accident in or near Las Vegas or another major urban center that might stigmatize the area and cause visitors to stay away in significant numbers or create other forms of significant economic disruption. The work to date demonstrates not only that Nevada is uniquely vulnerable to such stigmatizing effects because of its tourism-dependent economy and State revenue structure, but that other states and cities throughout the country could be impacted as a result of this same stigmatizing processes.

The following chapters reflect the findings from over 15 years of research dealing with the full range of potential impacts from the Yucca Mountain program. This information has been widely available in the scientific literature for years. It has been made available to DOE in a variety of ways and at numerous times. The fact that the full

range of impacts has not been considered and weighed by the Secretary in making the decision to recommend the Nevada site to the President for development as a repository can only be attributed to intentional neglect on the part of DOE.

This failure to undertake a broad-based and comprehensive evaluation of the socioeconomic, environmental, and public health and safety impacts associated with the Yucca Mountain program, both in Nevada and within cities and communities located along nuclear waste shipping routes nationally, renders any site recommendation not only premature, but also fundamentally flawed.

The Importance of Context

It is impossible to overstate the importance that context plays in conditioning both the likelihood of impacts occurring from the Yucca Mountain program as well as the magnitude of those impacts. The fact that the federal high-level nuclear waste repository program is being implemented in a coercive manner that ignores strong, ubiquitous, and long-standing opposition on the part of the State of Nevada and its citizens is an important factor that conditions how the entire array of impacts discussed in this report are manifested.

Context is also important with regard to the credibility of the implementing agency and the trust (or lack of trust) that exists in the agency's ability to implement such an unprecedented and risky program in a manner that is at once competent and safe, scientifically and technically unimpeachable, and ethically and morally legitimate. The manner in which DOE has approached the Yucca Mountain program, including the controversial and questionable science that has characterized the project and DOE's historical track record of contamination and, in some cases, intentional harm inflicted on people and communities throughout the country over the past five decades, all contribute to the atmosphere of pervasive distrust that permeates the Yucca Mountain program (SEAB, 1993).

It is also important to understand the relationship between the credibility and legitimacy of the implementing agency, technical issues associated with site suitability, program-related safety and risk issues such as those associated with the transportation of radioactive waste, and the socioeconomic impacts that would be visited on the State and the nation by this project. A program that lacks technical credibility, that ignores or obfuscates risks, and that fails to address fundamental issues and concerns raised by those most potentially affected (such as states and communities along potential HLW shipping routes) will invariably generate public and official distrust, which in turn exacerbates the risk perception and stigmatizing effects already known to be associated with a HLW repository and HLW transportation.

This lack of credibility is pervasive throughout DOE's HLW program. It is manifest both in the manipulation of "science" at Yucca Mountain and in the almost complete avoidance of the risks and impacts associated with waste transportation nationally.

For more than ten years, Nevada officials have maintained that the Yucca Mountain site should be disqualified from consideration for development of a repository. They have based this conclusion on DOE's own siting guidelines, which require that a repository site be disqualified if it fails to meet certain very specific conditions. DOE has long maintained that any Yucca Mountain siting decision would be based on sound science. However, when it appears that science dictates the site be disqualified, DOE's response has been to change the rules.

As recently as November 2001, DOE issued new site evaluation guidelines when the groundwater travel time from the repository to the accessible environment was shown to be greater than that allowed in the disqualifying condition for this factor under the old guidelines. The new guidelines permit DOE to ignore this critically important safety issue by relying solely on a very complex performance assessment whereby the troubling issue of rapid water movement through the repository becomes lost in an almost unintelligible mix of fact and wishful thinking (i.e., assumptions and expert judgment in place of measurable data).

As more and more problems were discovered about Yucca Mountain's ability to isolate highly radioactive and long-lived waste, DOE has moved farther and farther away from the concept of geologic isolation – the fundamental and guiding principle embodied in the Nuclear Waste Policy Act as ***the*** national policy for disposing of spent nuclear fuel and HLW. DOE now relies almost exclusively on "engineered barriers" to keep deadly radiological materials from migrating out of the repository and into the environment. Among the exotic "fixes" are waste disposal containers that supposedly will last between 10,000 and 700,000 years and over 100 miles of titanium drip shields within the repository tunnels.

DOE's own performance assessment models show that the actual Yucca Mountain site is so poor that it can be counted on for less than 5% of the overall system performance (i.e., the waste isolation capability), while engineering measures make up the remaining 95% of the total performance of the system. Not only is this a clear violation of the underlying premise of the Nuclear Waste Policy Act that geology must be the primary barrier, but it also undermines the foundational recommendation of the National Academy of Sciences that manmade materials not be used in a repository to compensate for faulty geology or hydrology. What DOE has done is to turn the concept of geologic isolation of high-level radioactive waste on its head and turn Yucca Mountain into an environmental and public health and safety time bomb kept in check only by a series of exotic, untested, and highly uncertain manmade barriers.

The technical case against Yucca Mountain is compelling. Twice now the State of Nevada has demonstrated that the Yucca Mountain site cannot meet existing federal regulations and should be disqualified. Each time, however, either the regulation was changed or DOE simply refused to acknowledge the validity of the State's analysis. In a final act of either defiance or desperation, DOE has now completely changed the rules by which the site is evaluated.

A similar situation exists with respect to critical issues involving the safety of nuclear waste transportation to a Yucca Mountain repository, especially as it applies to prospective waste shipments nationally. Since at least 1986, states and states' organizations (such as the Western Interstate Energy Board and the Western Governors' Association) have been calling on DOE to proactively disclose crucial information about the proposed HLW transportation system that would be needed to implement the Yucca Mountain program. It has long been recognized by these states that transportation of SNF and HLW has the potential to inflict substantial risks to states and communities along national shipping routes. These risks are significant "drivers" of many of the socioeconomic and related impacts associated with the federal program. DOE's and the federal government's approach to transportation analysis, planning, risk identification, and risk management has done little to attenuate these risks and, instead, has either served to obfuscate or actually exacerbate risks and their consequences.

It is not coincidental that, after more than 18 years of work and planning for the management and disposal of spent fuel and HLW under the Nuclear Waste Policy Act, most people and public safety officials in states and cities directly affected by tens of thousands of repository-related nuclear waste shipments remain almost entirely ignorant of this impending burden on their communities. Nor is it an oversight that even the most basic transportation decisions – such as the mode of transport or the routes that would be used – have yet to be made (or at least made publicly available) either for Nevada or for the national transportation system. Such lack of planning and disclosure can only be attributed to gross incompetence or intentional withholding of information.

The coercive nature of the federal program, the lack of technical and programmatic integrity, and the willingness of federal actors to ignore risks and safety issues for political or policy reasons combine to create an environment of distrust that has become an ideal breeding ground for the types of severe, pervasive, and long-lasting impacts the State of Nevada has identified in this report.